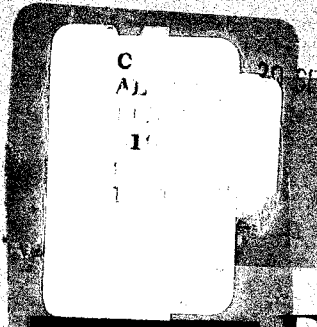


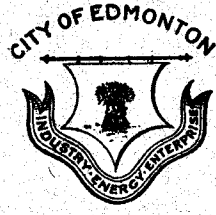
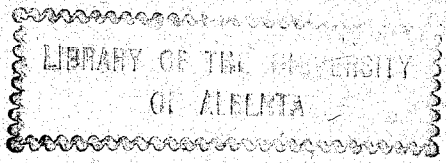
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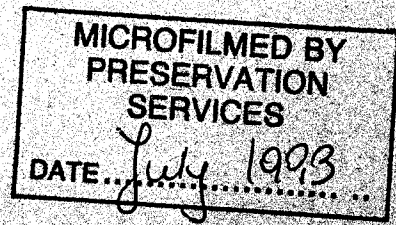
CITY of EDMONTON

ALBERTA



BOARD of HEALTH REPORT

1931



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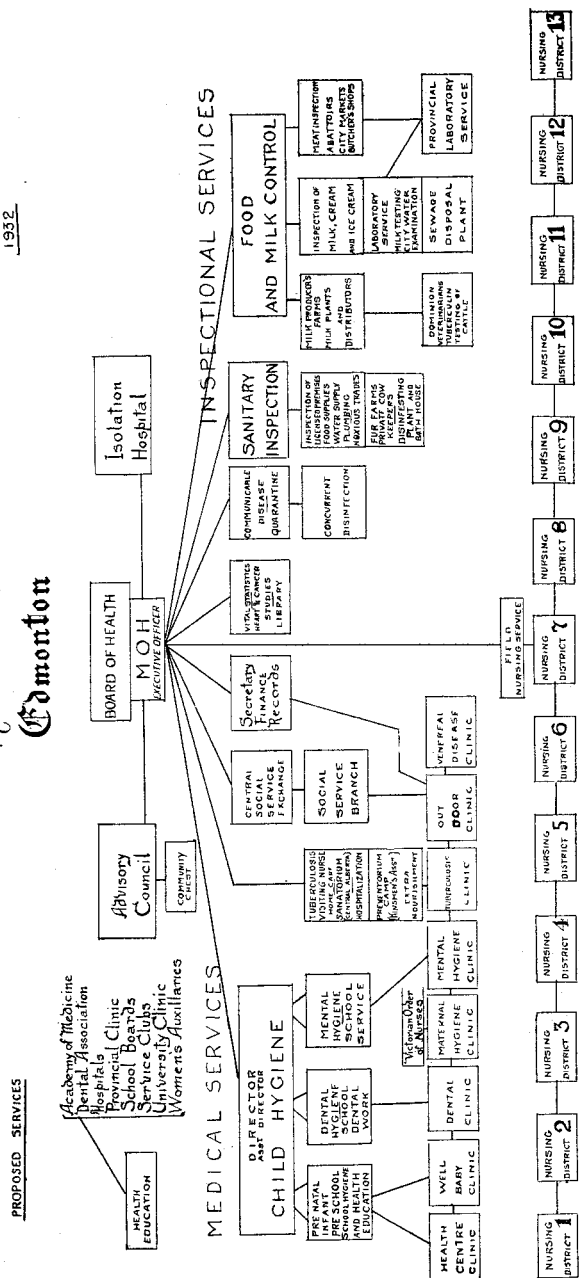
STAFF

Medical Officer of Health	R. B. Jenkins, M.D., D.P.H.
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Chief Health Inspector	W. R. Graham
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Health Inspector	T. E. Lord
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Health Inspector	J. D. Williams
Quarantine Officer	R. T. Anderson
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Dairy Supervisor	C. Ellinger
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Public Health Nurse	Miss S. C. Christensen, R.N.
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1932



Annual Report of Medical Officer of Health

Members of the Local Board of Health and City Commissioners.

Gentlemen:

I beg to submit herewith the Annual Report concerning the activities of the Board of Health executive officers.

In common with other parts of this continent our general death rate, 6.39 per M, continues to be low: better even than last year, which gave many places their lowest recorded death rate. Unfortunately the infant mortality rose somewhat, from 48.92 to 55.65 per M. living births, though not as much as might have been anticipated. Maternal mortality was reduced from 4.0 to 3.59 per thousand births. One-half of the six deaths in this class were due to Puerperal Septicaemia, a preventable disease.

Cancer last year was the principal cause of death, accounting for 13.25% of the total; this year it fell to 10.56%. Diseases of the heart took first place being responsible for 12.33% although the actual number of deaths from this cause was one less than in 1930.

The communicable diseases were fewer than in 1930 by 900 cases, and there were 41 deaths from this group as compared to 48 in 1930. Scarlet Fever was reduced from 219 to 83. Diphtheria increased from 9 to 30. Of the 30 only one had had toxoid and further, the final treatment in that case was given only ten days prior to the onset of the disease. We know that several months elapse before the maximum resistance is developed. There were fewer deaths from Tuberculosis, 17 as compared to 22, but it will be noticed that there were 71 cases reported, an increase of 16. This increase should not be interpreted as an actual increase but rather as an indication of the effectiveness of the service provided by the Kinsmen's Club in the search for cases. Cases have also been well reported by the hospitals.

May I draw your attention to the considerable increase that has occurred in the prenatal and postnatal work, 587 visits, more than double the number made last year. No effort should be spared to develop this field, which has to do not only with the reduction of infant mortality but also with the prevention of chronic invalidism that all too commonly has followed confinement.

The work of the sanitary inspectors has been increased in amount and in difficulty because of the lowered living standard and the financial difficulties that are often involved in correcting defects. Inspection of premises for license was also more difficult. New businesses were often contemplated where there was insufficient capital to meet the sanitary needs of the community.

There was a continuance of the steady increase of sewer installation and the co-operation of the Building Inspector has kept to the minimum the number of new houses lacking sewer and water.

The food and milk inspection services are giving assurance of good products; 73% of milk samples taken contained less than 15,000 bacteria per c.c.

Yours respectfully,

R. B. JENKINS,

Medical Officer of Health.

FINANCIAL STATEMENT**EXPENDITURE**

	1931	1930
Salaries	\$29,692.86	\$30,644.69
Printing, Postage and Stationery	900.82	1,231.84
Transportation	5,059.26	3,859.82
Telephones	206.75	203.90
Miscellaneous	501.04	850.31
Uniforms	244.00	224.00
Communicable Disease	166.81	335.34
Food and Dairy Inspection	273.95	110.25
Ambulance		810.12
	<u>\$37,045.49</u>	<u>\$38,270.27</u>

REVENUE

Inspection Fees	\$ 354.50	\$ 201.25
Ambulance		429.73
	<u>\$ 354.50</u>	<u>\$ 630.98</u>
Balance Cost of Operation	<u>\$36,690.99</u>	<u>\$37,639.00</u>

SUMMARY OF STATISTICS

Population (1931 census)	79,059	77,557
Area of City (including 1,000 acres of water)	26,520	26,520
Persons per acre of land	3.08	2.92
School Enrolment	16,009	17,943
Natural Increase of Population	1,160	1,133
Cost per Capita	0.46	0.47
Births, Excluding Stillbirths	2,424	2,493
Births, City Parentage only	1,671	1,676
Births, City Parentage only, rate per 1,000 pop.	20.88	20.95
Stillbirths	53	62
Stillbirths, rate per 1,000 births	30.74	35.67
Deaths, Excluding Stillbirths	810	872
Deaths, Citizens only	511	543
Deaths, citizens only, rate per 1,000 population	6.39	6.79
Deaths, citizens only, under one year of age	93	82
Infant Mortality, rate per 1,000 living births	55.65	48.92
Marriages	1,226	1,338
Marriages, rate per 1,000 population	15.32	16.72
Number of Deaths from Childbirth	6	7
Maternal Mortality, rate per 1,000 births	3.59	4

VITAL STATISTICS**Births**

Male, 885; Female, 786; Total1,671

Born in Hospital, 1,401; born home, 270.

Physician attending, 1,648; unattended, 23.

Maternal Parentage—

Of the 1,671 City Births:—

716 or 42.85%—Canadian.

409 or 24.47%—British.

170 or 10.17%—U.S.A.

376 or 22.50%—Foreign or Unstated.

84 or 5.02% of births were illegitimate, of these:—

43 or 51.19%—Canadian.

10 or 11.9 %—British.

7 or 8.33%—U.S.A.

22 or 26.20%—Foreign.

2 or 2.38%—Unstated.

Stillbirths

Male, 33; Female, 20; Total	53
Born in Hospital, 48; Unattended, nil.	
Ages of Mothers:—	
15 years to 19 years	2
20 years to 24 years	16
25 years to 29 years	15
30 years to 34 years	11
35 years and over	9
Nationality of Mothers:—	
Canadian	31
British	8
United States	5
Foreign or Unstated	9
Cause of Foetal Death:—	
Dystocia	14
Prematurity	12
Malformation	2
Other diseases or conditions of mother	25

Deaths

Male, 299; Female, 212; Total	511
Canadian	282
British	139
United States	32
Foreign	54
Not Stated	4

Under 1 year of age:—

Total Registered, 146; Male, 88; Female, 58.

Total City Deaths, 93; Male, 57; Female, 36.

Rate per 1,000 living births—55.65.

13 PRINCIPAL CAUSES OF DEATH

1931			1930		
	No.	% Total	Rate per 100M pop.	No.	% Total
87- 90 Diseases of Heart	63	12.33	79	64	11.78
43- 49 Cancer	54	10.56	57	72	13.25
165-202 External Causes	47	9.19	58	48	8.82
160-163 Diseases of Early Infancy	31	6.06	39	36	6.63
100-101 Pneumonia	27	5.28	33	30	5.52
128-129 Acute & Chronic Nephritis	24	4.69	30	18	3.31
31- 37 Tuberculosis	23	4.50	29	36	6.63
11- Influenza	22	4.35	27	12	2.21
74- 75 Apoplexy, Paralysis	16	3.13	20	20	3.68
117- Appendicitis and Typhlitis	16	3.13	20	12	2.21
113-114 Diarrhoea	16	3.13	20	12	2.21
159- Malformation	15	2.93	19	8	1.47
143-150 The Puerperal State	6	1.17	7.5	7	1.28
	360	70.45		375	69.00
All other causes	151	29.55		168	31.00
Total Deaths	511	100.00		543	100.00

Of the 47 deaths from External Causes, 14 were suicides and 15 due to Automobile Accidents.

SUMMARY OF INFANT DEATHS

CAUSE OF DEATH

By Season

By Age

	January	February	March	April	May	June	July	August	September	October	November	December	Under 1 day	Under 1 week	Under 1 mth.	1-3 mths.	4-6 mths.	7-9 mths.	10-12 mths.	Outside	Registered Total
1 9 Whooping Cough																				1	1
11a Influenza broncho-pneumonia	1	1														3	1			3	6
11b Influenza with empyema	3	1	1		1																1
11c Influenza with pulmonary congestion	1																			1	1
11g Influenza with complications	3	1	1	1											1	2	1			3	8
16c Dysentery	3		1	1					1	1					1	1				1	3
21 Erysipelas																					1
38 Syphilis	1								1									1		1	1
41 Straphylococcus meningitis																					1
49 Shock following removal Sarcoma of arm	1				1									1						1	1
62 Enlarged Thymus	1				1			1						1							1
69b Haemorrhagic neonatorum	1				1																1
88c Haemorrhage of the New Born	1				1																1
80 Convulsions	1				1																1
84 Congenital Idiocy	1				1																1
98a Acute Bronchitis	2	1		1											3	3	3		1		12
100a Broncho-pneumonia	9	4	3	1				1								1				3	2
101a Lobar pneumonia	1																				1
107c Abscess of lung, malnutrition	1																				1
113 Diarrhoea	15	1	3			1	1	3	3	1	2				6	4	5			5	20
117 Appendicitis																				1	1
118b Intussusception	1						1													1	1
131 Acute Pyelitis	1								1								1				1
134 Exfoliative Dermatitis																					1
155 Acute Osteomyelitis (Luetic)	1				1															2	2
159a Congenital Hydrocephalus	4								1	1	2			2		1				2	6
159b Congenital malformation of heart	7	1	1	1					1	1	1	1		1	6					2	9
159c Congenital malformation	4	1	1	1	1				1	1	1	1		1	1	2				2	6
160 Congenital Debility	4	1	2	2					1	1	3	4	14	6	1	2				19	41
161a Premature Birth	22	2	3	1	2	3	1	2	1	1	1	3	3	1	1	1				3	7
161b Injury at Birth	4				2	1														2	7
162 Sepsis of new born (Gen. Peritonitis)	1																			1	1
179 2nd degree burn (scalded)																					1
TOTAL	93	7	14	7	9	10	8	2	7	10	5	9	5	21	7	24	13	6	1	53	146

SUMMARY OF CITY DEATHS

[illegible]

COMMUNICABLE DISEASE

	1931		1930	
	Cases	Deaths	Cases	Deaths
Acute Anterior Poliomyelitis	7	1	11	2
Cerebro Spinal Meningitis (Meningococcic)	4	1	4	2
Diphtheria	30	1	9	1
Diphtheria Carriers	22	0	0	0
Scarlet Fever	83	1	219	3
Smallpox	20	0	10	0
Chickenpox	812	0	681	0
Measles	31	0	132	0
Mumps	147	0	718	2
Rubella	6	0	4	0
Typhoid Fever	4	0	7	0
Para-typhoid Fever	2	0	7	0
Whooping Cough	224	0	507	0
Erysipelas	37	0	55	3
Tuberculosis (Pulmonary)	71	17	55	22
Tuberculosis (other forms)	5	3	0	13
Pneumonia	9	8	3	0
Dysentery	2	3	0	0
Venereal Disease	6	1	0	0
Trachoma	1	0	0	0
Puerperal Septicaemia	2	5	0	0
Encephalitis, Lethargica	0	0	1	0
Septic Sore Throat	0	0	2	0
Totals	1525	41	2425	48

The 1,525 cases of Communicable Disease give a Morbidity Rate of 19.06 per one thousand population.

528 cases or 34.61% were pre-school children, 776 cases or 50.84% were school children and 221 cases or 14.55% were adults.

There were 7,287 school days lost on account of communicable disease or at an average cost per pupil of 40c, a loss of approximately \$3,000.00. The diseases mostly responsible were chickenpox, mumps, whooping cough and scarlet fever.

The 776 cases among the school population attending Grades 1 to 8, or 13,729 pupils, give a morbidity rate of 56.5 per thousand school children.

Of the 41 deaths from Communicable Disease, 31 were among adults, 18 due to Tubercular conditions and 6 to pneumonia.

ISOLATION HOSPITAL

There were admitted 405 patients, discharged 374, died 39 and remaining in hospital at end of the year, 32.

The diseases hospitalized included Scarlet Fever 79, Erysipelas 44, Diphtheria 34, Diphtheria Carriers 27, Tuberculosis 14, Meningitis (all forms) 18, of whom 14 died, and Smallpox 18; 32 suspect cases and 35 non-infectious cases were also admitted.

Mortality—9.63%.

IMMUNIZATION

The campaign of immunization against Smallpox and Diphtheria has been continued by the Local Board, with the co-operation of the Public and Separate School Boards.

	Smallpox Vaccination	Diphtheria Inoculation	Typhoid Fever Vaccination
Local Board	540	177	8
Public Schools	3,500	1,562	0
Separate Schools	233	184	0
	4,273	1,923	8

T. B. NURSING SERVICES—March, 1931 to February, 1932

Total Visits, 2,448; Positive, 1,325; Suspects, 266; Contacts, 241.

New Cases—Positive, 101; Suspects, 43.

Clinic Examinations—Total 318.

PUBLIC HEALTH NURSING

A total of 3,205 visits have been made as follows:—

	1931	1930
Child Welfare Visits	2,390	2,753
Investigation Visits	113	136
Pre-natal Visits	392	180
Post-natal Visits	195	39
New Births Visited	115	not counted

DISABILITIES FOUND DURING DISTRICT VISITS

	Pre-School			
	Babies	Age	School Age	Adults
Infectious Disease	8	3	0	2
Disease of the Eye	5	7	1	0
Lymph Glands	2	29	36	0
Parasites	3	13	18	14
Endocrin Gland	0	0	1	6
Genito Urinary System	4	6	2	0
Nervous System	1	1	0	0
Glandular Condition	0	0	0	2
Vascular System	0	0	0	2
Skin, Muscle, Bone and Joints	50	17	0	6
Infectious Conditions	4	6	1	9
Metabolism	19	15	8	0
Digestive System	39	6	0	0
Respiratory System	6	4	0	0
Congenital	8	3	0	0
Other Conditions	1	4	0	3

There were 49 neo-natal deaths, 31 of the mothers received pre-natal care; 12 none, and 6 for which no information was obtainable.

Investigations were made into all other city deaths under one year of age. In this way Public Health teaching is carried out in homes, and information obtained for statistical purposes.

PRE-NATAL AND POST-NATAL SERVICE

Pre-natal visits	392
Post-natal visits	195
New cases admitted	221
Discharged	198

CHILD WELFARE CLINICS

	1931	1930
Clinics held during the year	117	102
Babies in attendance	4,797	4,376
Pre-school in attendance	1,184	910
Total number in attendance	5,981	5,286
Average attendance	51	52
New babies admitted	888	804
New pre-schools admitted	215	164
Babies referred to family doctor	46	37
Pre-schools referred to family doctor	31	32

A very excellent co-operation exists between the Provincial Department of Health, Outdoor Clinic, Victorian Order of Nurses, Red Cross Society and other Public Health Workers.

Owing to the depression and unemployment situation we have many needy families, a number of these cases have been helped by our ever willing church workers, private organizations and clubs. Layettes have been made for new babies and clothes given to other members of the family. Our City Relief Department have always been willing to supply extra milk to case that have been reported by us as requiring the additional amount.

SANITARY INSPECTION

INSPECTIONS

833 complaints were received from the public, of these 168 were unfounded or rectified prior to inspection, 249 were referred to other departments, 7 referred to garbage contractor; 10 complaints were received from other departments.

For the abatement of nuisances 6,212 verbal notices were issued, 911 written notices; total, 7,123.

24,742 inspections were made of public and private premises, 3,545 re-inspections were made.

FOOD INSPECTION

All premises where foodstuffs are prepared or offered for sale to the public have been kept under supervision and instructions have been issued where necessary.

LICENSES

Number of licenses granted was 503. Number of licenses held for re-inspection 37. Number of licenses refused 45.

In this branch of the work inspections of bake shops, barber shops, bath houses, butcher shops, candy and ice cream parlors, dairies, dog kennels, entertainment halls, fish dealers, hair dressing and manicuring, laundries, lodging houses, pool, billiard and dance halls, restaurants, and vegetable and fruit wagons, were carried out.

SEWER AND WATER INSTALLATION

134 notices were issued for the installation of sewer and water; 33 notices were complied with. Figures from the Building Inspector show that 438 plumbing permits were issued. Of these 224 were for new installations, the remainder, 214, was spread over old buildings and buildings other than dwellings. Thirty-two citizens received financial assistance from the city in the installation of plumbing.

Complaints were received regarding the lack of drainage in the district west of 127th Street and south of 127th Avenue. Some cases of Typhoid Fever were reported from this district. The question of drainage was taken up with the Engineer's Department regarding this district. Sewer has been extended 300 feet south of 125th Avenue in lane west of 125th Street, and water mains have been laid in the lane west of 128th Street, between 125th and 126th Avenues; and in the lane west of 127th Street, between 125th and 126th Avenues.

HOUSING SUPERVISION

786 daylight visits were made to hotels and lodging houses in the city, inspections of these premises were carried out at night as well, in order to deal with overcrowding, and notices issued to the proprietors of the places where necessary; 1,647 placards re spitting and overcrowding were posted in lodging, rooming and boarding houses.

Rooming house keepers who persisted in overcrowding and who were providing accommodation for relief cases instead of being prosecuted in the police court, or having their license cancelled, were struck off the relief books. This had the desired effect in compelling them to comply with the requirements of the by-laws.

INDUSTRIAL HEALTH SERVICE

Inspections were made of manufacturers' premises and dry cleaning establishments, etc., and instructions given where necessary for improving working conditions for the employees.

RELIEF WORK

On December 31st, 1930, a bath house and disinfecting station was opened at the Canada Dry Building on 102a Avenue. The work was carried on here until November 24, 1931, when the premises were destroyed by fire. Shortly after a new station was opened in the old Fire Hall premises on 98th Street. A bathroom, a room for washing clothes, dressing room and two dis-

infecting chambers were provided. Very satisfactory results have been obtained to date.

Number of baths given	11,152
Number of bathers verminous	1,488
Number disinfested	2,081
Number of scabies cases treated	218
Number of bed units disinfested	526
Number of mattresses and pillows disinfested	103
Number of men washing clothing	836
Number of units washed	2,194

SCAVENGING

Scavenging work has been carried out satisfactorily during the past year and few complaints were received at this Department or the Engineer's Department during that time. Fourteen teams are employed for the removal of ashes and refuse and two trucks on the north side of the river. Five teams are employed on the south side. Two teams are employed in night scavenging work.

Clean-up work commenced May 1st and was completed on June 3rd. 1,477 loads of refuse were removed from the north side of the river and 299 loads from the south side. 16,000 circulars were distributed in connection with this work. Twenty-eight teams were employed and 42 men.

DAIRY AND STABLE INSPECTION

All premises where cattle are kept in the city are checked up regularly by the inspectors of this Department, and instructions issued where necessary for repairs and improvements to be made to the premises.

We are endeavouring to have all persons keeping animals in the city, in districts where sewer and water is available to provide impervious floor and connect to sewer. We have been successful in a few cases but owing to the present conditions it will not be possible to obtain good results in all cases.

Three hundred and sixty-five inspections were made of old plumbing systems.

WATER

Water Tanks	8
Chlorinate Water Tanks	1
Water Samples Taken	75
Wells Placarded	22
Wells Filled in	4
Wells Chlorinated	2
Wells Inspected	54
Ice Samples	11
Ice House Inspected	3

Where a break occurs in any section of the city mains, after the repairs, a sample of water is taken from a house served in that district and submitted to the Provincial Laboratory for examination. It has been suggested to the City Commissioners, that arrangements be made to have the mains in a district where a break occurs chlorinated after the repairs have been carried out, as it has been found that samples of water in one or two cases have been contaminated.

ENFORCEMENT OF REGULATIONS

Enforcement of regulations has been carried out as advised in last year's programme. It has not been necessary to prosecute any one. A letter from the City Prosecutor to the person in default has obtained the desired results.

FOOD INSPECTION

The whole Department of Food Inspection has been changed and re-organized so that proper inspection of all animals, other than veal is made at time of slaughter. Veal is inspected at city markets daily and also in butcher shops on request.

The principle of charging a fee for this service, collected monthly, has been introduced. The whole Department is now working in a very satisfactory manner. The largest abattoir under city inspection was closed for four months because of a change in ownership and this accounts for the reduction in the total number of animals slaughtered.

MEATS INSPECTED AND CONDEMNED

	No. Inspected	Portions	CONDEMNED	
			Carcasses	Weight
Beef	1,356	208	7	5,990
Veal	2,268	21	7	1,010
Mutton	2,364	195	14	951
Hogs	4,429	1,525	12	12,625
	<u>10,417</u>	<u>1,949</u>	<u>40</u>	<u>20,576 lbs.</u>

Other Foodstuffs Condemned:

Canned Goods	772
Fowl	135
Fish	10
Fruit	135
Vegetables	275
Sundries	631

Foodstuffs Condemned by Health Inspectors:

Canned Goods	3,086
Meat	340
Fish	2,269
Fruit	369
Vegetables	290
Candy	95
Tomatoes	99
Sundries	286
Total	<u>29,370</u>

Number of visits made, 3,901.

Number of complaints received from the public, 21.

Number of complaints on investigation found to be justified, 9.

DAIRY INSPECTION

Five hundred and twenty-four applications for dairy licenses were received, four hundred and twenty-five of which comprise the general milk supply and come under my report as follows:

	Totals	Granted	Refused
Local and within 15 mile radius of city (Milk)	325	322	3
More distant points (Cream)	100	100	0
	425	422	3

Fifty-two dairy licenses were suspended during the year, forty-nine for short periods and three were suspended indefinitely.

During the past two years our milk producers have received instruction in the production and handling of milk under more sanitary conditions. Quite possibly this educational programme has been carried further than elsewhere in Canada. Some time ago it was realized that education combined with farm inspection was not achieving the desired results. The method of inspection under what is known as the score-card system had also been tried, which did not produce the expected results. Our existing methods of control do not give the producer a satisfactory incentive to improve the quality of his milk, chiefly because milk of better quality or milk which has been produced under more sanitary conditions is required to compete on an almost equal basis with poorer milk or milk which has been produced under less sanitary conditions. This is especially true of the raw milk which is shipped to milk plants to be pasteurized and which comprises about seventy per cent. of the Edmonton milk supply.

A grading system adopted as part of a milk ordinance, such as I suggested in 1930 and recommended in my special reports during 1931 for adoption will attain the desired status of milk sanitation rapidly and in a manner which is both fair to the producer and distributor alike and which is readily understood by the consuming public. It also leads to an increase in the consumption of milk.

The Reductase test of raw milk received by the milk plants to be pasteurized, which is carried out weekly by the milk plants, came under my supervision by arrangement with the milk plants. During the year approximately eleven thousand, nine hundred and sixty (11,960) samples of milk which were tested were classified according to the Standard methods of Milk Analysis of the American Public Health Association. More than ninety per cent. of this milk reaches Class 1. Further improvement at the point of production may be expected.

The supervision of the Reductase test has also resulted in a number of cows which were infected with a Mastitis being removed from the milking herds for slaughter. Closer results would be expected through a more exact method of determining the bacterial content of milk which is shipped to milk plants to be pasteurized.

Since 1922 all milk and cream which is consumed in fluid form within the City of Edmonton has been produced from cows which are Tuberculin tested by the Dominion Government of Agriculture (Health of Animals Branch) under what is known as the Edmonton Municipal Tuberculosis Order. During the fiscal year April 1st, 1930 to March 31st, 1931, twelve thousand and thirty-seven (12,037) cattle were Tuberculin tested. Twenty-six (26) reactors were found, (0.2%). The value of these animals was \$1,421.40, of which the Dominion Department of Agriculture paid two-thirds their value. The amount of compensation awarded being \$947.60. All reactors were slaughtered under inspection. The city is very fortunate in receiving this continued service in the control of bovine Tuberculosis.

Mention is made that Alberta is still the only province in Canada which has not yet taken advantage of the facility for having herds tuberculin tested under the Restricted Area Plan. There is reason to believe that the Dominion Department of Agriculture would favorably consider such an application.

During the Milk Enquiry last spring I was asked to give information to the Agricultural Committee of the Legislative Assembly of Alberta. Three meetings of dairy farmers were also attended. Several educational circulars were written and mailed to all producers who supply the milk plants.

A milk house was designed which is particularly suited to the climate of Alberta. Last autumn several were built and they have since been found to be satisfactory in every way.

The appreciation is acknowledged of the assistance given the Dairy Supervisor by the many public health officials, dairy farmers and the milk plant operators during his study of the milk control methods adopted by several cities which were visited in the States of Oregon and Washington, U.S.A. Special thanks are due Dr. W. H. Haskell, Milk Specialist of the United States Public Health Service, Mr. J. R. Jennings (now chief milk control official of the City of Louisville, Kentucky), Mr. F. Kehrli and Mr. A. J. Shultz of the city of Portland Milk Division and Dr. H. R. Thornton, Dairy Dept., University of Alberta, Edmonton.

MILK INSPECTION

During the year there were taken eleven hundred and sixty-two samples of retail milk, an increase over the previous year of one hundred and fourteen. The results of the bacterial examination are as tabulated. The samples which could not be counted on account of the growth of spreader organisms are not taken into account in arriving at the percentages in each group.

	Special	15,000 to 40,000	40,000 to 100,000	100,000 to 400,000	Over 400,000	Spreader	Total
January	67	10	5	1	1	1	85
February	72	6	7	3	0	1	89
March	74	11	3	0	0	0	88
April	98	14	6	2	0	0	120
May	77	7	5	2	0	2	93
June	61	11	12	5	2	1	92
July	53	17	10	6	4	0	90
August	50	12	5	11	4	4	86
September	82	22	7	3	0	3	117
October	62	23	10	3	0	1	99
November	69	18	3	1	0	1	92
December	73	19	16	3	0	0	111
Total	838	170	89	40	11	14	1162
Per Cent.	73.0	14.8	7.7	3.5	1.0		

As our system of classification has been changed somewhat it is difficult to compare the results with previous years. However, our first three classes now correspond to the first two formerly used and we have now 95.5% of the samples falling in these classes as against 94.0% the previous year. Also the total proportion not exceeding forty thousand this year (87.8%) slightly exceeds the proportion up to fifty thousand the previous year so that continued improvement is evident.

In awarding the marks for sediment test we have been slightly raising our standards also. The average mark for 1,142 samples tested was found to be 8.77 as against 8.87 the previous year.

The average butter fat (1,143 samples) was 3.82% which is identical with that of last year. The variation from month to month was quite small, from 3.91 in November and also in September to 3.7 in August. The average for solids not fat (8.65%) was also identical with that of the previous year.

Our system of classifying of the milk vendors and their products from the examination of their samples, also from equipment and methods on their place is being continued with good results and nine different milks have never once failed to make the grade for our best classification. Two others, although they do not get full marks for equipment and therefore have to score exceptionally high in other respects and so failed to be always in this class, are to be congratulated in that they have averaged ten thousand or less on their bacteria count and obtained maximum marks given for this in each and every month.

During the summer months practically all the retail samples were tested for temperature and marks given for proper cooling. Some of our high bacteria counts could be readily traced to lack of this essential procedure. All pasteurized samples were also tested for colon bacillus as a workable index of proper pasteurization.

In addition to these regular tests of retail samples several special tests were made mostly of individual samples. Two hundred samples were tested, for preservative with negative results. Five samples were tested for added coloring matter, the results being again negative.

There were also tested a number of what might be termed private samples. These were mostly samples brought in for test or taken by request either for our information or for the information of parties concerned. Forty-six such samples tested for butter fat gave an average of 3.76%. Total solids on six samples averaged 8.82%. The bacteria counts on twenty-

eight samples ranged from one thousand to eight hundred and forty thousand, eighteen grading special. Four dirt tests gave an average of 8.2 and one which was too small to be properly tested showed a large amount of dirt.

There were eleven cream samples tested for butter fat, the average being 27.2%. Bacteria counts on eight creams all ran fairly high, the lowest being eighty thousand.

Nine samples of rinse water from cans and bottles were taken to test for sterility and nine samples of water to check on sterility of ice cream servers.

A couple of milk samples were examined on account of possible connection with reported sickness.

There were 241 samples of water from the swimming pools forwarded to the University for test. Of these twenty-two or 10% gave counts of over 200. There were no positive colon tests during the year.

About 205 chemical tests were made of the swimming pool water for the presence of free chlorine, nitrites ammonia, etc. At one of the pools the presence of considerable amounts of nitrites were found which were interfering with chlorine tests and sterilization control. Over chlorinating was apparently successful in destroying them. Supervision was given to the emptying, cleaning, renewing of the filters at one of the institutions having a swimming pool. Chemical reagents were made up and supplied to all of the various pools as required for the continuous testing of the water.

General supervision was given to the operation of the sewage disposal works and tests were made of the raw and treated sewage, sludge, supernatant liquid of the digestion tank, and gas produced. Number four plant which handles a large proportion of packing plant waste presented a real problem and gave some trouble with odor until well operating. Solutions have been made up for the plants for testing operations.

Samples of water were taken from the river both above and below the city for comparison and interesting data obtained. There were also run during the year special tests on soils to determine probability of corrosion of cement work being carried out.

Tests for arsenic on suspected vegetables, and tests to try and determine nature of color on garment said to have been stained by the city water, were also carried out.

